



PHYSICS

Entry Requirements: Grade 6,6 in Combined Science GCSE or if you have studied the Sciences separately, Grade 6 in at least two, including Physics. Plus a Grade 5 in GCSE Maths.

Exam board: AQA

Full Subject Specification website: <http://filestore.aqa.org.uk/resources/physics/specifications/AQA-7407-7408-SP-2015.PDF>

Why study Physics:

When you decide to study Physics with us at Stratford Upon Avon School you will be committing to discovering not only the fundamental underpinning reasons for every aspect of how our universe functions but also to developing a method of thinking, questioning and problem solving that will allow you to continue pushing your understanding of the physical world long after you've stopped directly studying.

Have you ever wondered?

- Where lighting comes from?
- Why the standby light on a computer or T.V stays on for a few seconds after it's been turned off?
- Why is the sky blue?
- Why is the earth Round and not square?
- How can you catch a cricket ball without breaking your fingers?
- How do we know what the sun is made of?
- What actually is light?
- What has Stephen Hawking been talking about for the past 40 years?
- Why doesn't Sheldon like quantum loop gravity?
- Why are black holes black?

If you decide to study Physics, after every single lesson you will leave the room knowing and understanding something amazing.

Subject Specification Outline:

- 1 Measurements and their errors
- 2 Particles and radiation
- 3 Waves
- 4 Mechanics and materials
- 5 Electricity
- 6 Further mechanics and thermal physics
- 7 Fields and their consequences
- 8 Nuclear physics
- 9 Astrophysics

Alongside the subject content students learn the fundamental skills, experimental working methods and modes of thinking required to succeed at A level Physics.

The mix of topics will allow students to cover both the breadth and depth of Physics. From the very large scale explanations of how a galaxy orbits a supermassive black hole, to the mechanics by which the crumple zones in cars dissipate energy, to the counter intuitive quantum model of subatomic behaviour. Even more exciting than discovering and understanding these discrete areas of physics is identifying the common links and underlying fundamental laws of physics underpinning everything.

If nothing else the structure of the course will allow students to be the people at the dinner party who actually understand what Brian Cox is talking about!

Progress Assessment:

- Regular in-lesson micro assessment to ensure that any misconceptions or gaps in knowledge can be dealt with swiftly to allow our students to maximise their learning potential
- Semi-regular short assessments per topic (In the region of one every 2 to 3 weeks) allow our students regular practice at applying their learning to exam scenarios and receive individual feedback and time to act on this
- Less frequent longer exam style assessments to prepare students for the reality of terminal examinations

Final Exam Format:

Paper 1 – Topic 1-5 & 6.1, 2hrs.
Paper 2 – Topic 6.2, 7 and 8, 2hrs.
Paper 3 – Topic 1-9, 2hrs.

Self Study Requirements:

An hour of self study for every hour of taught lesson. Self study will include consolidating lesson notes, questions from the textbook, past paper questions and online research.

Progression Pathways:

Traditionally Physics is strongly associated with Mathematics; there is a definite benefit to studying both; the skillset and problem solving techniques have a significant overlap with those in Physics. However, although beneficial there is no need to study Mathematics if you wish to continue with Physics – our teachers will be aware of the other subjects their students cover and will ensure the mathematical tools required to study Physics are explicitly taught at an appropriate level.

Although content between the courses is quite divergent there is an overlap between Physics, Biology and Chemistry. The subjects share common experimental working practices, developing an ability to pose scientific questions and apply abstract scientific law to explain everyday phenomena. Studying multiple sciences will only help to improve and build on these skillsets.

There is no hiding from the fact that A level Physics is hard, you will have to learn to put aside everyday common sense notions and accept mind-bending ideas that are completely counter intuitive. You will need to use some quite sophisticated mathematics to describe these ideas. However, although Physics is one of the hardest A levels it is also one of the most respected by universities and potential employers.

An A level in Physics would be respected and valued in any future path way but would have particular relevance to;

Studying medicine, studying law, engineering apprenticeships, science degrees, research scientists, journalism & broadcasting, energy industry, electrical, lighting & sound engineer and medical physicist.